High School Sophomore Makes Big Find

In 1999, seventeen-year-old Tyler Lyson, a high school student in North Dakota, was exploring a rock formation on his uncle's ranch when he saw something that interested him. He carefully dug it out. He had always been interested in dinosaurs and had learned a lot about them. He realized that he had found the vertebra of a dinosaur! He was pretty sure there were more bones where he had found this one, but he didn't have the equipment or the training to dig them up.

Tyler went to college, where he learned more about **paleontology**, the study of fossils. In 2004, Tyler went back to the site by the creek. Instead of just a couple of tailbones, he realized there might be an entire dinosaur. However, he needed equipment and a team of people to help excavate it.

Tyler contacted a famous paleontologist, Dr. Phillip Manning. He worked with Tyler to create an excavation plan.

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Tyler Lyson at work in the lab.

Finally, in 2006, Tyler, Manning, and their team began digging up the dinosaur. First, they dug out a huge block of rock that held the fossilized bones, to make sure that the bones stayed together. Then they loaded the block on a truck and drove it to a place with a large CT scanner. They spent several months taking pictures of the inside of the rock. Tyler told *USA Today*, "This will be an animal that I'll be studying for the rest of my life."

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science in the news

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The Mummy of All Dinosaurs

By Jane Sellman

MARCH 2008: Scientists Dr. Phillip Manning and Tyler Lyson have big dinosaur news. Their team has **excavated** (dug up) a dinosaur mummy in North Dakota! That's a dinosaur that has been **fossilized**, or turned to stone, with its skin, skeleton, and organs intact. Dinosaur mummies are rare. Only ten dinosaur mummies have ever been found.

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Tyler Lyson uses a jackhammer to remove rock from around fossils.

What's so important about this discovery? Scientists usually have only bones, small fossils, or tracks to study. But a mummy dinosaur gives scientists a chance to learn about how dinosaurs really looked and how they moved.

Manning and Lyson dug the dinosaur out of the ground along with a big chunk of rock around it, to keep it protected. They took the huge rock to a giant CT scanner (a machine that helps doctors and scientists see inside the body). This CT scanner was designed to scan parts of the space shuttle to look for flaws. It's the largest CT scanner in the world.

Using this scanner, scientists have discovered that the

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dinosaur, a **hadrosaur** they named Dakota, probably had stripes. The stripes would have made good **camouflage**.

The scanner also showed that dinosaurs were even *larger* than anyone thought. By examining Dakota's backbone, scientists have realized that current estimates of the spacing between most dinosaurs' **vertebrae** are wrong. Each vertebra should be about one centimeter away from the next. That means that all estimates of dinosaur length need to account for this extra space. This will add about a meter (about a yard) to many of the larger dinosaurs! Many museums around the world will now have to reexamine their dinosaur displays.

Dr. Manning and his team also discovered that Dakota was fast. The muscles in the hadrosaur's behind were 25 percent bigger than they thought. This means

© National Geographic, Dr. Phillip Manning

that Dakota could run about 28 miles per hour. Dakota could have outrun the average *Tyrannosaurus rex*! That's good, because the *T. rex* was very fond of snacking on hadrosaurs.

Scientists are still studying Dakota. They have more to learn. Each discovery about Dakota tells scientists something new about his species, and sometimes about all dinosaurs!

Word Wise

Hadro comes from a Greek word for "bulky," and *saur* comes from a word that means "lizard."

Compare and Contrast

T. rex

- Length: 40'
- Weight: 6-7 tons
- Speed: 20 mph
- Teeth: pointed for tearing meat
- Skull: huge, strong jaws for killing

Hadrosaur

- Length: 36'
- Weight: 4-5 tons
- Speed: 28 mph
- Teeth: flat for chewing plants
- Skull: medium size

What else can you compare between these two dinosaurs?

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What is a Hadrosaur?

A hadrosaur is a dinosaur that lived millions of years ago. It was a large animal with a mouth that jutted out like a duck's bill. Some hadrosaurs also had a crest on their head. Scientists used to believe that the hadrosaur had webbed feet. Dakota revealed that instead it had pads on its feet, like a camel. Hadrosaurs could have been as large as 40 feet long. The hadrosaur was an herbivore—it did not eat other animals, only plants, such as pine cones.

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